



NATIONAL SEMINAR
on
AI POWERED EDUCATION RESHAPING TEACHING AND LEARNING
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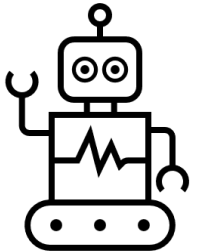
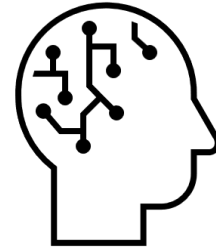
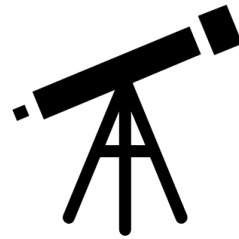
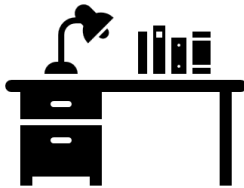
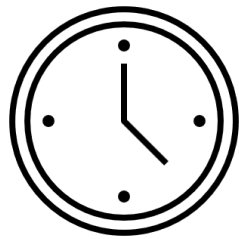
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AI POWERED EDUCATION

A TRANSFORMATIVE APPROACH UNDER NEP 2020



NATIONAL EDUCATION POLICY 2020

National Education Policy 2020 which is founded on the five pillars; **Access, Equity, Quality, Affordability** and **Accountability**.

It unveiled by the Government of India, aims for a transformative approach in the Indian Education System by 2040.

It is designed to make education more holistic, flexible, multidisciplinary, suited to 21st century needs, and aimed at bringing out the unique capabilities of each student.

This policy introduces significant reforms in both school and higher education sectors, focusing universalization from preschool to secondary level, aiming to bring back 2 core out-of-school children into the mainstream of education.

KEY OBJECTIVES OF NEP 2020

Introducing a new curricular structure known as the 5+3+3+4 system that addresses the educational needs from ages 3 to 18.

Emphasizing foundational literacy and numeracy, no rigid separations between academic streams, extracurricular and vocational streams.

Promoting multilingualism, national ethos, and the integration of technology in education.

Ensuring accessibility, equity, and quality of education for all, thereby increasing Gross Enrollment Ratios.

Revising and revamping all aspects of the education structure, including its regulation and governance, to create a new system aligned with the aspirational goals of 21st-century education

AI IN EDUCATION

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines programmed to think and act like humans.

This involves developing algorithms and computer programs that can perform tasks typically requiring human intelligence, such as visual perception, speech recognition, decision-making, learning from experience.

AI operates by learning and adapting from data, allowing it solve problems. Make predictions and offer strategies.

Machine learning, a core component of AI, enables computers to learn autonomously from data inputs without being explicitly programmed for every scenario recognizing patterns and making predictions accordingly.

POTENTIAL OF AI IN TRANSFORMING EDUCATION

AI has significant potential to address some of the major challenges in education today, innovate teaching and learning practices, and accelerate progress towards educational goals. It can cater to diverse student needs, enhance instruction, and drive educational innovation.

By integrating AI technologies, educators can engage students more effectively, adapt to individual learning styles, and improve educational outcomes. UNESCO emphasizes the importance of harnessing AI technologies to achieve the Education 2030 Agenda, guided by principles of inclusion and equity. The organization supports member states in utilizing AI to enhance accessibility to knowledge, ensure equitable learning opportunities, and mitigate technological divides within and between countries.

POINT OF VIEW: NEP 2020



National Education Policy of India (NEP) 2020 places a significant emphasis on integrating Artificial Intelligence (AI) into the education system to ensure that curriculum aligns with the requirements of the 21st century.



The policy highlights the importance of AI education at all levels of education, aiming to prepare students for the AI economy by imparting necessary technical knowledge.

POINT OF VIEW: INDIAai



From a young age, school children will be introduced to critical skills like digital literacy, coding, and computational thinking, with subjects such as AI being part of the curriculum.

At the undergraduate level, AI-3D machining, big data analysis, and machine learning will be integrated to produce industry-ready professionals.

The NEP 2020 also envisions the use of AI-powered solutions for achieving its goals of a multilingual and holistic education, alongside promoting high-quality research in the realm of science and technology.

POINT OF VIEW: EdTechReview



NEP 2020 aims to leverage technology across technology across various levels of education to improve accessibility, quality, and the delivery of education.

This includes initiatives for digital infrastructure development, online teaching tools, virtual labs, and digital repositories.

The policy also proposes the establishment of the National Educational Technology Forum (NETF) to serve as a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, and administration in both school and higher education.

AI TOOLS FOR EDUCATORS

ADMINISTRATIVE TASK REDUCTION

AI assistants can greatly reduce the administrative work for teachers by handling tasks such as grading, data entry, and scheduling automatically. This frees up educators to spend more time on teaching and interacting with their students.

VIRTUAL TUTORS AND PERSONALIZED LEARNING

AI-powered virtual tutors can offer customized teaching tailored to each student's performance and needs, improving the educational experience. This customization is also applied in AI-based grading systems and tools like Gradescope, ChatGPT, and Cognii Virtual TA, providing personalized feedback and support.

PROFESSIONAL DEVELOPMENT

AI can aid in the professional development of teachers. AI tools can recreate classroom scenarios for practice, offer instant feedback, and help educators keep up with the latest trends and developments in their field.

AI TOOLS FOR EDUCATORS

EMPOWERING EDUCATORS

Educators need preparation and support to fully utilize AI tools. This includes integrating technology into teacher training programs, offering professional development opportunities, and ensuring educators can critically evaluate and use AI tools effectively. Key aspects involve understanding AI's capabilities, addressing potential risks (like privacy concerns and bias), and maintaining the capacity to override AI decisions when necessary.

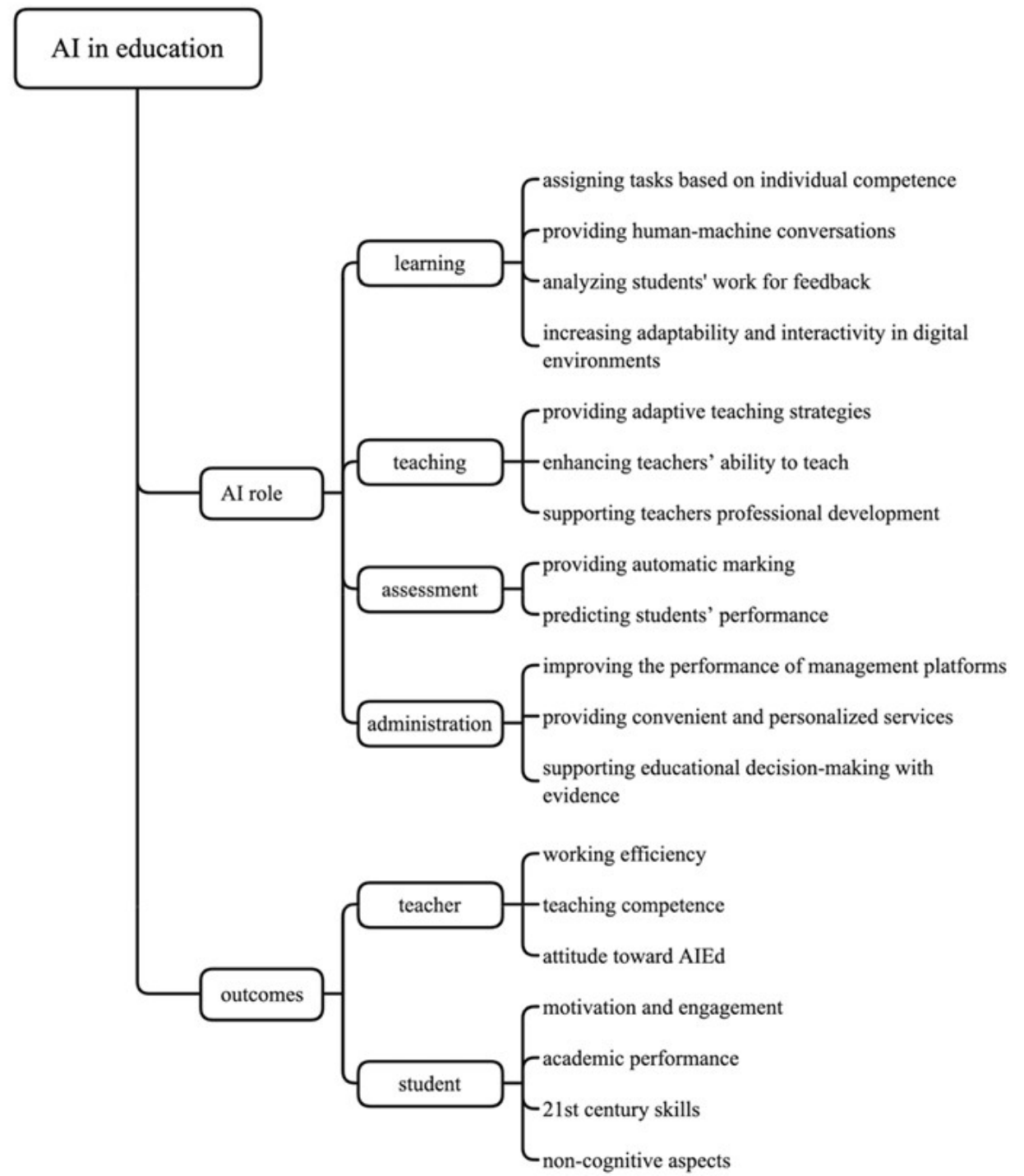
DESIGN, SELECTION, AND EVALUATION OF AI TOOLS

Teachers should actively participate in selecting and evaluating AI tools for their classrooms. This process includes understanding the explainability of AI models, ensuring transparency, and considering equity to prevent bias. Tools should be chosen not only for their technical capabilities but also for their ability to meet the diverse needs of students.

AI INNOVATIONS IN EDUCATION

AI innovations are broadening educational horizons, offering tools for language teaching, interactive learning. These innovations aim to enhance productivity, provide personalized tutoring, and facilitate efficient learning solutions across various

The roles and outcomes of AI in Education



Top 10 Challenges in ARTIFICIAL INTELLIGENCE EDUCATION

- 1.Lack of Diverse Learning Resources** ☐: Need for more varied and adaptable resources in personalized learning.
- 2.Selecting Appropriate Data for AI Models** ☐: Challenges in using detailed, ethical data for AI predictive models.
- 3.Connecting AI Technologies with Teaching** ☐☐☐: Bridging the gap between emerging AI technologies and practical teaching applications.
- 4.Lack of Interdisciplinary AI Technologies** ☐☐: Developing AI tools that are effective across various learning disciplines.
- 5.Widening Educational Inequity** ☐☐: Addressing the digital divide that AIEd may exacerbate among students.

Top 10 Challenges in ARTIFICIAL INTELLIGENCE EDUCATION

- 6. Insufficient AI Knowledge Among Teachers** 🧠: Enhancing teachers' understanding of AI technologies for effective integration into teaching.
- 7. Negative Attitudes Toward AI** 😞: Overcoming anxiety and skepticism among students and teachers regarding AI.
- 8. Lack of Research on Socio-Emotional Aspects** ❤️: Need for more studies on the socio-emotional outcomes of AIEd.
- 9. Educational Perspectives Missing in AIEd Research** 🎓: Incorporating educational research perspectives into AIEd studies.
- 10. Ineffective Evaluation Methods for AIEd** 📊: Developing new methods to evaluate AI systems in education effectively.

SUCCESS STORIES OF AI IN EDUCATION

Researchers from the Indian Institute of Technology-Madras are using artificial intelligence and data science to make teaching and learning better. They're working with the School Education Department to set up a learning management system in 6,000 government schools that have advanced labs. This project will help improve learning for about 90 lakh (9 million) students. By using AI and data science, they will also make testing and grading better and more efficient. This opportunity is available not just for government schools but for private school teachers and students too.

Dr. Prathap C. Reddy (founder of Apollo Hospitals) states that new technology lets doctors help more patients at once. It can analyze symptoms and suggest possible diagnoses, making doctors' work quicker and more precise. This tech aims to bring top-notch healthcare to everyone, making it both affordable and easy to get, as Reddy mentions. It offers advanced healthcare technologies at much lower costs, making high-quality care more accessible. Chaitanya Bharadwaj highlights the strong focus on keeping patient data safe through methods like making the data anonymous and encrypting it. The technology, designed with local Indian data, is better at dealing with diseases common in India, making it more effective locally.



SUCCESS STORIES OF AI IN EDUCATION

AI assists farmers by analyzing vast amounts of data to make informed decisions about planting and water use, optimizing agricultural output and reducing expenses.

A \$1 million grant has been given to IIT Madras to create a Centre for Responsible AI within the Robert Bosch Centre for Data Science and Artificial Intelligence (RBC-DSAI). This center will focus on research that combines different areas of study to tackle ethical and technical issues in AI. The goal is to bring together experts from schools, businesses, and the government to work on using AI ethically, making fair rules, and ensuring the technology is reliable and safe. The initiative aims to make India a leader in developing and using AI in a way that is ethical and fair for everyone.



SUCCESS STORIES OF AI IN EDUCATION

A recent study has been published; a bibliometric analysis conducted by Watrianthos et al. in 2022.

This research was done in Indonesia, featured in the Journal of Information Technology Education: Innovations in Practice. The study on the AI Family Challenge revealed that underprivileged families are enthusiastic about AI education and willing to participate in programs tailored to their needs, with the main attractions being collaborative learning, engaging in hands-on activities, exploring new technologies, and socializing with others. For instance, low-income families in La Paz,



CREATORS OF AI AND MACHINE LEARNING COURSES FOR ENHANCED PRODUCTIVITY



Dhruv Rathee

Indian YouTuber, vlogger and social media activist. He has developed many academic courses using AI and ChatGPT.



Siraj Raval

DApp developer & entrepreneur. He is founder of a crowdfunding platform for developers called **Havi**, has developed several iOS apps including Meetup, and has worked on a host of open-source work. Besides being a programmer, Siraj is also a traveler, musician, postmodernist, and scuba diver



Dr. Pawan Soni

An **Innovation Evangelist by profession and a teacher by passion.** IIM Bangalore. Innovation, Creativity and Strategy Entrepreneurship, TEDx Speaker.



Tanmay Bakshi

An **AI architect at IBM, Google Developer Expert for ML, Author, and TED & Keynote Speaker** on a mission to make learning programming, artificial intelligence, and technology accessible to everyone.

They can do it, so can every educator attending this seminar, along with adopting the most constructive approach

To Teaching and Learning By Teaching and Learning For Teaching and Learning

In my presentation, I elucidated how India and other nations have harnessed artificial intelligence within the realm of education to achieve remarkable successes across disparate fields. It has become evident that AI-powered education transcends mere drawbacks, revealing a plethora of benefits. Within India, the dichotomy of AI-powered education encompassing both its merits and demerits is being scrutinized.

Today, I urge all educators to adopt a holistic perspective, recognizing and embracing the multifaceted nature of AI-powered education. Let us collectively aspire towards enhancing the quality and accessibility of education in India, leveraging AI to raise inclusivity and equity. I propose that from this moment forth, we embark on collaborative research and action planning, joining hands to navigate towards the successful integration of AI in our educational frameworks.

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